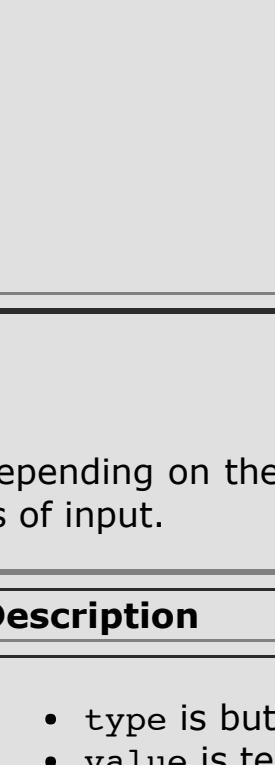


HTML

Full list of HTML elements

As a reminder, in most browsers you can right-click on a page and select View Source to see the HTML code used to render the page.

Basic HTML

Tag	Description	Example
<html>	All content of your webpage must go inside <html></html> tags.	
<head>	Contains information about the webpage. The title tag goes inside <head>/</head> tags.	
<title>	Title of the webpage (what appears in the window/tab of your browser). The text itself does not appear on webpage.	
<body>	Everything that appears on the webpage should go between these tags	
<p>	Defines a paragraph (text with some space on the bottom and top).	<p>This is a paragraph.</p> This is a paragraph.
<h1>	Heading tag, bold and bigger text. You can use any number from <h1> to <h6> with <h1> being the largest heading and <h6> being the smallest.	<h1>larger heading</h1> <h6>smaller heading</h6> larger heading smaller heading
	Apply bold formatting to text	bold bold
	Apply emphasis to text	emphasis emphasis
	Inserts an image. <ul style="list-style-type: none">• src is the link specifying the image to display (it is a required attribute)• width (and height) specifies the size of the image (it is an optional attribute) Unlike most other tags, this start tag does not have a corresponding end tag.	 
<a>	Links to another webpage. <ul style="list-style-type: none">• href specifies the URL of the page to link to (it is a required attribute). There <i>must</i> be some text between the start and end tags to be the anchor of the link.	Duke University
<div>	Defines a section of the web page.	<div><p>This paragraph is inside a div.</p></div>

Lists

Tag	Description	Example
	List item. List items can go inside unordered list, , or ordered list, tags.	HTML
	Unordered list, each item has a bullet point.	HTMLCSS <ul style="list-style-type: none">• HTML• CSS
	Ordered list, each item has a number.	HTMLCSS <ol style="list-style-type: none">1. HTML2. CSS

Tables

Tag	Description	Example
<table>	Defines a table. By default a table has no borders and is only as wide as the text it contains.	
<tr>	Defines a table row (only has value within <table> tag). Table rows can contain either table data elements or table header cells.	
<td>	Table data element (standard table cell). Can contain many types of data including text, images, links, lists, or even a table.	<table><tr><td><table><tr><td>cell 1</td><td>cell 2</td></tr></table></td></tr></table> cell 1 cell 2
<th>	Table header cell (a table cell with bold text).	<table><tr><th>heading</th></tr><tr><td>content</td></tr></table> heading content

Input

Because the attributes used with input elements varies so much depending on the type of input you want to use, we have provided several specific examples of using different types of input.

Example	Description
<input type = "button" value = "change" onclick = "alert('clicked button')">	<ul style="list-style-type: none">• type is button• value is text that appears on button• onclick is event handler, specifies to call alert function when button is clicked
<input type = "color" value = "#001A57" id = "clr" onchange = "docolor()">	<ul style="list-style-type: none">• type is color picker• value is default color value• id lets us refer to input element in JavaScript• onchange is event handler, specifies to call docolor function when color is changed
<input type = "range" min = "10" max = "100" value = "10" id = "sldr" oninput = "dosquare()">	<ul style="list-style-type: none">• type is slider• min = minimum value, max is maximum value• value = default value• id lets us refer to input element in JavaScript• oninput is event handler, specifies to call dosquare function when slider is changed
<input type = "text" id = "finput">	<ul style="list-style-type: none">• type is text• id lets us refer to input element in JavaScript
<input type = "file" multiple = "false" accept = "image/*" id = "finput" onchange = "upload()">	<ul style="list-style-type: none">• type is file• multiple = "false" indicates user can only select one file• accept = "image/*" indicates user can only select image files• value is default value• id lets us refer to input element in JavaScript• onchange is event handler, specifies to call upload function when input changes

CSS

Full list of CSS properties

Mozilla color picker tool

This website challenges people to use CSS to make as many different stylized versions as possible using the same HTML code.

Common CSS Properties and Values

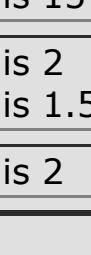
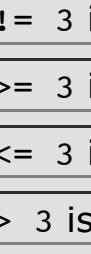
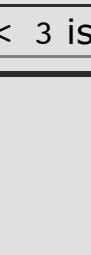
Property	Example Values	Use with	Example
color	blue rgb(0,0,255) #0000FF	text: paragraphs, links, list elements, table cells, headings	h1 { color: rgb(0,0,255); }
font-size	12pt 16px 100%	text	p { font-size: 14pt; }
text-align	left right center justify	text	td { text-align: center; }
background-color	blue rgb(0,0,255) #0000FF	table, table cell, page backgrounds	body { background-color: #00FF00; }
vertical-align	top middle bottom	table cells	th { vertical-align: top; }
float	left right	images	img { float: right; }
width	100px	tables, table cells, images	td { width: 80px; }
height	100px	tables, table cells, images	td { height: 10px; }
border-width	5px	tables, table cells, images	table { border-width: 2px; }
border-style	solid dotted dashed	tables, table cells, images	table { border-style: solid; }
border-color	blue rgb(0,0,255) #0000FF	tables, table cells, images	table { border-color: red; }
border	5px 10px dotted 5px dashed green	tables, table cells, images	table { border: 2px solid red; }
border-collapse	collapse	table	table { border-collapse: collapse; }

Course Specific JavaScript Functions

SimplePixel

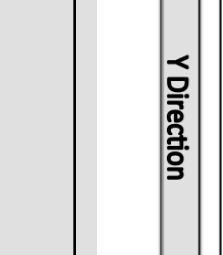
For these examples, assume

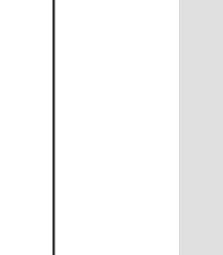
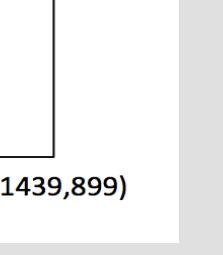
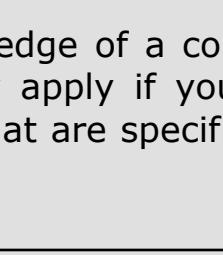
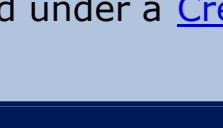
- pix1 is a pixel at coordinate (100, 200) representing the color Duke blue, with RGBA values of (0, 26, 87, 255)
- pix2 is a pixel at coordinate (300, 400) representing the color white, with RGBA values of (255, 255, 255, 255)

Function name	Description	Example
getX()	returns the pixel's x-coordinate within the image	pix1.getX() is 100
getY()	returns the pixel's y-coordinate within the image	pix1.getY() is 200
getRed()	returns the value of the pixel's red component (always in the range 0-255)	pix1.getRed() is 0
getGreen()	returns the value of the pixel's green component (always in the range 0-255)	pix1.getGreen() is 26
getBlue()	returns the value of the pixel's blue component (always in the range 0-255)	pix1.getBlue() is 87
getAlpha()	returns the transparency of the pixel's alpha, component (always in the range 0-255)	pix1.getAlpha() is 255
setRed(newR)	changes the value of the pixel's red component to newR (if newR is not in the range of 0-255 it is changed to be in that range)	pix1.setRed(255) changes the value to (255, 87, 255) 
setGreen(newG)	changes the value of the pixel's green component to newG (if newG is not in the range of 0-255 it is changed to be in that range)	pix1.setGreen(255) changes the value to (0, 255, 87, 255) 
setBlue(newB)	changes the value of the pixel's blue component to newB (if newB is not in the range of 0-255 it is changed to be in that range)	pix1.setBlue(255) changes the value to (0, 255, 255, 255) 
setAlpha(newA)	changes the value of the pixel's alpha, or transparency, component to newA (if newA is not in the range of 0-255 it is changed to be in that range)	pix1.setAlpha(100) changes the value to (0, 26, 87, 100) 
setAllFrom(otherPixel)	changes the value of all of the pixel's components (its red, green, blue, and alpha) to match otherPixel's values	pix2.setAllFrom(pix1) changes the value of pix2 to (0, 26, 87, 255) 

SimpleImage

For these examples, assume the variable logo has the value of the image "devil.png" below. It is 100 pixels wide and 85 pixels tall.



Function name	Description	Example
new SimpleImage(filename)	creates a SimpleImage to represent the image in filename	new SimpleImage("devil.png") is 
new SimpleImage(width, height)	creates a SimpleImage whose dimensions are width by height. All the pixels in this image are black (0, 0, 0, 255)	new SimpleImage(100, 85) is 
new SimpleImage(fileInputElement)	creates a SimpleImage to represent the image selected using the fileInputElement given from the web page	var input = document.getElementById("fileLoader"); var img = new SimpleImage(input); 
getWidth()	returns the image's width, or number of pixels in the X direction	logo.getWidth() is 100
getHeight()	returns the image's height, or number of pixels in the Y direction	logo.getHeight() is 85
getPixel(x,y)	returns the pixel in this image at the coordinate (x, y)	logo.getPixel(0, 0) is the pixel (255, 255, 255, 255) 
setPixel(x,y,pixel)	copies the RGB values from the given pixel into pixel at the (x,y) coordinate given	logo.setPixel(50, 42, pix2) changes the color to white 
setSize(width, height)	resizes the image to be width by height. The image is scaled to fit into the new dimensions.	logo.setSize(300, 85) is
values()	returns all the pixels in the image, starting in the upper-left corner and moving down-right corner, providing a way to access each pixel in turn	for (var pixel of logo.values()) { // modify pixel }
drawTo(canvas)	draws the image to the canvas, for drawing images on web pages	document.getElementById("canvas").drawTo(canvas);

Printing

Function name	Description	Example
print(something)	displays something in the main "See It" area of the page	print(image) shows the image
debug(something)	displays something in the small area at the bottom of the "See It" area of the page	debug(x) shows the value of the variable x

Standard JavaScript

Arithmetic Operations